

Busmann series Quik-Spec Power Module Switch elevator disconnect



Catalog symbol:

- PS_

Description:

Eaton Bussmann® series Quik-Spec™ Power Module Switch is an all-in-one elevator disconnect switch available in configurations to meet virtually any single elevator shutdown and disconnect requirement.

Specifications:

Ratings

- Volts - 208, 240, 480, 600Vac
- Amps - 30, 60, 100, 200, 400
- SCCR - 200kA RMS

Agency information

- UL® 98 enclosed and dead-front switch - Guide WIAX, WIAX7 (Canada), File E182262
- cULus, NEMA® 1, UL 50, Listed enclosure cUL per Canadian Standards C22.2, No. 0-M91-CAN/CSA® C22.2, No. 4-M89 enclosed switch
- U.B.C. and C.B.C. seismic qualified, and I.B.C. approved

Features:

- 30-400 amp 600Vac 3-phase fused power switch
- 200kA RMS Short-Circuit Current Rating (SCCR)
- Shunt trip 120V
- Fire safety interface relay
- Fire alarm voltage monitoring relay (to monitor shunt trip voltage)
- Ground lug
- Class J fuse mounting only¹
- Mechanically interlocked auxiliary contacts for hydraulic elevators with battery backup (5 amp 120Vac rated)

Options:

- Control power transformer with fuses and blocks
- Key to test switch
- Pilot light – “ON”
- Isolated neutral lug²
- NEMA 3R, 4, and 12 enclosures

For added protection, use the Bussmann series SAMI™ fuse covers³ to improve electrical safety [OSHA 1910.335(A)(2)(ii)]. See data sheet no. 1204.

¹ Class J fuses not included.

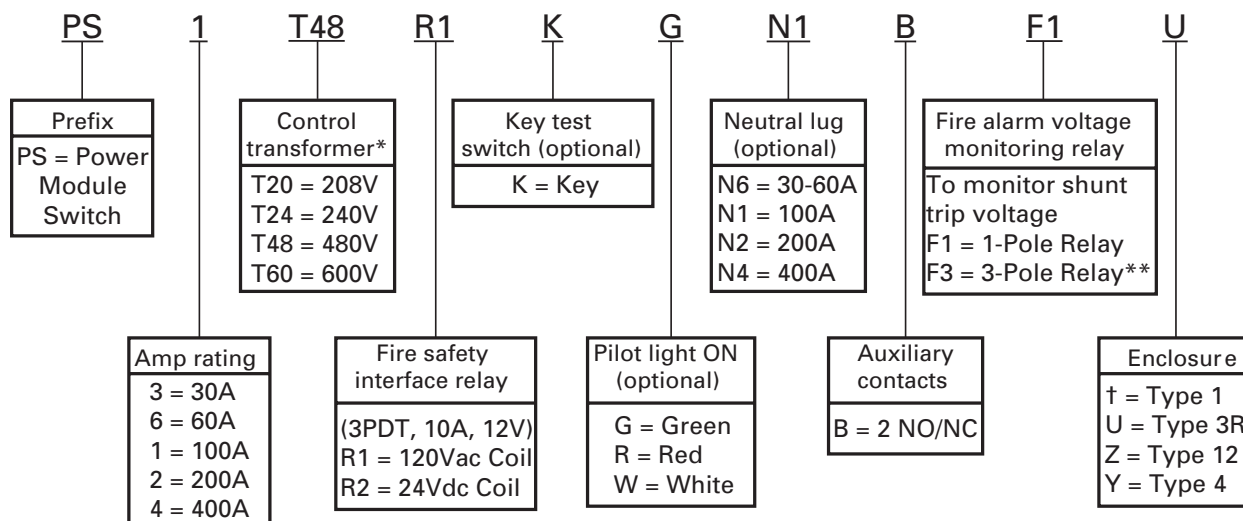
² Oversized 200% rated neutral option available where required by excessive non-linear loads.

³ Covers available up to 100A.



Powering Business Worldwide

Catalog number system:



* 100VA with primary and secondary fusing (120V secondary).

** For use only with R1 option.

† Type 1 standard, no suffix designator required.

Conductor data:

Cat. no. prefix	Amps	Lineside molded case switch connection (Al-Cu)			Loadside fuse block connection (Al-Cu)				
		Conductor range	Torque		Screw head/style	Conductor range	Torque		Screw head/style
			Wire size	lb-in (N·m)			Wire size	lb-in (N·m)	
PS3	30	#14-1/0	#14-10	35 (3.9)	Slot HD	#14-2	#14-10	35 (3.9)	Slot HD
			#8	40 (4.5)			#8	40 (4.5)	
			#6-4	45 (5.1)			#6-2	45 (5.1)	
			#3-1/0	50 (5.6)					
PS6	60	#14-1/0	#14-10	35 (3.9)	Slot HD	#14-2	#14-10	35 (3.9)	Slot HD
			#8	40 (4.5)			#8	40 (4.5)	
			#6-4	45 (5.1)			#6-2	45 (5.1)	
			#3-1/0	50 (5.6)					
PS1	100	#14-1/0	#14-1/0	50 (5.6)	Slot HD	#14-1/0	#14-1/0	50 (5.6)	Slot HD
PS2	200	#4-4/0	#4-4/0	120 (13.5)	3/16" hex socket	#4-300kcmil	#4-300kcmil	275 (31.1)	5/16" hex socket
PS4 ¹	400	(2) #2-500kcmil	(2) #2-500kcmil	375 (42.4)	5/16" hex socket	(2) 1/0-300kcmil or (1) 750kcmil	(2) 1/0-300kcmil or (1) 750kcmil	500 (56.5)	3/8" hex socket

Conductor data:

Neutral mains connection (Al-Cu)					
Cat. no. prefix	Amps	Conductor range	Torque		Screw head/style
			Wire size	lb-in (N·m)	
PS3	30	#14-2	#14-10	35 (3.9)	Slot HD
			#8	40 (4.5)	
			#6-2	45 (5.1)	
PS6	60	#14-2	#14-10	35 (3.9)	Slot HD
			#8	40 (4.5)	
			#6-2	45 (5.1)	
PS1	100	#14-1/0	#14-1/0	50 (5.6)	Slot HD
PS2	200	#6-250kcmil	#6-250kcmil	275 (31.1)	5/16" hex socket
PS4	400	(2) 1/0-300kcmil or (1) 750kcmil	(2) 1/0-300kcmil or (1) 750kcmil	500 (56.5)	3/8" hex socket

Terminal block data:

Catalog no.	Wire range (Cu)	Torque lb-in (N·m)	Screw head/style
All	#22-#10	5.3-7 (0.6-0.8)	Slot

Switch maximum horsepower ratings:

Ratings are based on three-phase, motor type and time-delay fuses.

Voltage (Vac)	Switch amp rating				
	30A (PS3)	60A (PS6)	100A (PS1)	200A (PS2)	400A (PS4)
208	5	10	15	40	75
240	5	10	20	40	75
480	10	25	40	75	150
600	15	30	50	100	200

The above table can be used for estimating switch amp ratings for motor loads based upon the motor horsepower. For general applications, excluding wound rotor and DC motors, NEC 430.52 allows sizing at 175% of motor Full Load Amps (FLA) or the next standard size per NEC 240.6. If sizing at 175% will not allow the motor to start, NEC 430.52 will allow the fuses to be sized up to 225% of motor full load amps or the next size down.

NOTE: In sizing the fuses, the motor FLA is per NEC table 430.250, not per motor nameplate information. Inrush currents of motors may vary, consult motor manufacturer data for correct sizing. On elevator applications, motor load plus auxiliary loads need to be considered. Follow elevator manufacturer's recommendation for correct fuse sizing.

Standard shunt trip ratings:

For 30-100A, 200A and 400A Power Module Switches.

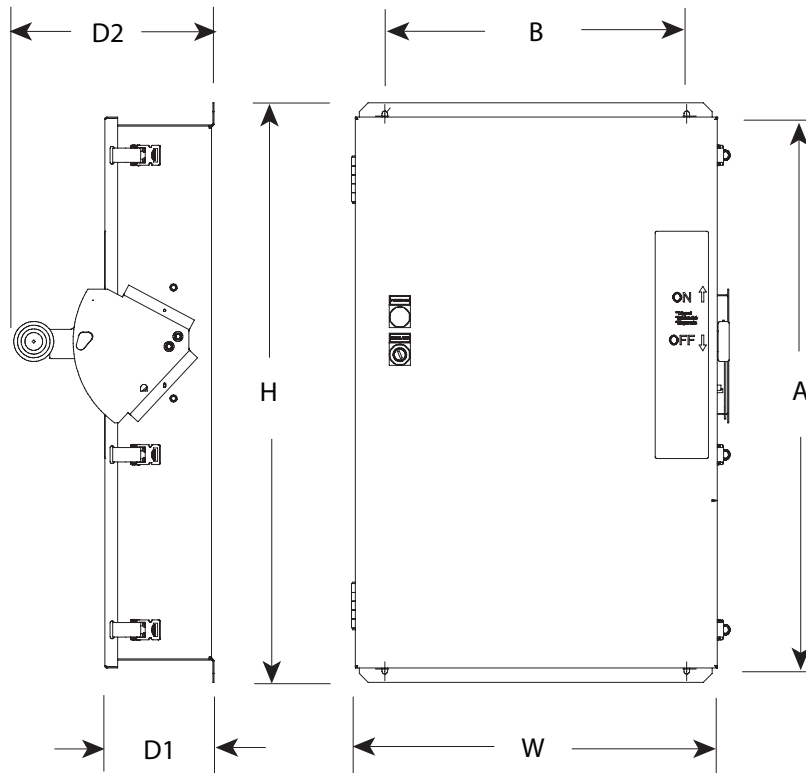
Voltage	Max inrush	Max ontime*	Momentary inrush
120Vac, 60Hz	4 amps	1.5 cycles	140VA

* Will handle up to 447VA inrush.

Dimensions — in (mm):

Catalog no. prefix	Amps	H	W	D1	D2	A	B
PS3	30						
PS6	60	29.6 (752)	17.3 (439)	6.9 (165)	11.2 (284)	28.4 (721)	10 (254)
PS1	100						
PS2	200	32.6 (828)	21.3 (541)	7.0 (178)	11.3 (287)	31.1 (790)	17 (432)
PS4*	400	54.6 (1387)	26.5 (673)	7.5 (190)	12.7 (323)	53.3 (1354)	22 (559)

* PS4 dimensions shown are for NEMA 1 enclosure only. Contact factory for availability of other enclosure ratings.



Power Module Switch shipping weights*

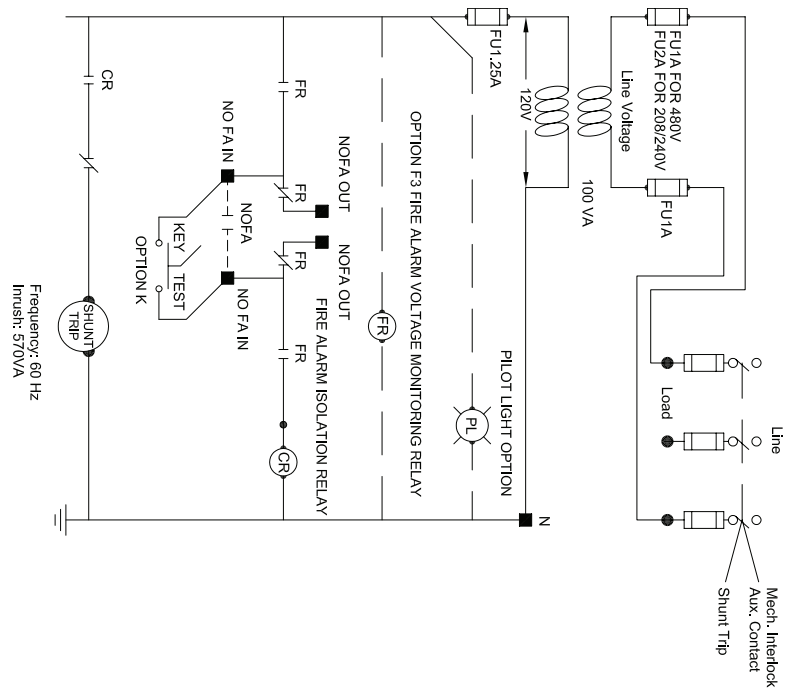
Switch catalog number family	Weight — lbs. (kgs)
PS1	58 (26.3)
PS2	76 (34.5)
PS3	58 (26.3)
PS4	198 (89.8)
PS6	58 (26.3)

* Weights for each catalog number family are average.

Power Module Switch wiring — continued:

OPTIONS R1 & F3

TYPICAL CONTROL WITH WIRING OPTIONS FOR FIRE SAFETY INTERFACE

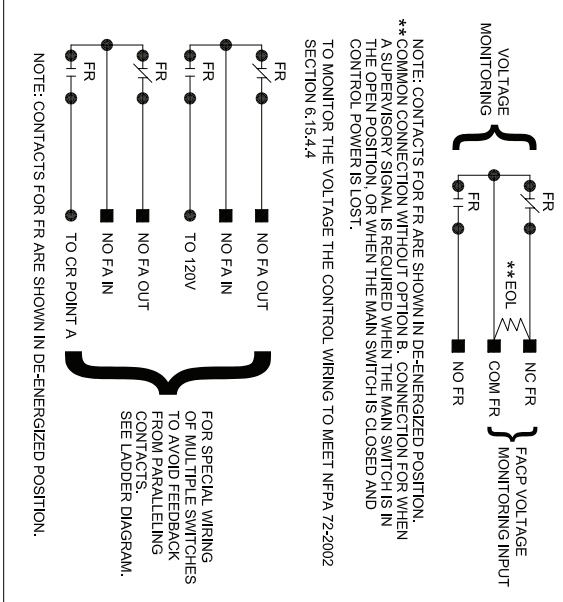


AUXILIARY SWITCH LOGIC				
MAIN SWITCH POSITION	OPTION A	OPTION B	OPTION A *	OPTION A *
CLOSED	NO	NC	NO	NC
TRIPPED	C	C	O	C
OPEN	C	O	C	O

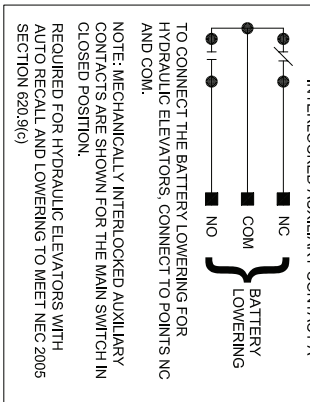
* AUXILIARY SWITCH LOGIC WHEN BLUE WIRE WITH "+" MARKER IS REMOVED FROM NC TERMINAL.

WHERE LOCAL AUTHORITIES HAVING JURISDICTION PERMIT, FIELD REMOVAL OF THE BLUE WIRE IDENTIFIED BY "+" MARKER WILL CHANGE THE OPTION A SWITCH LOGIC. SEE THE AUXILIARY SWITCH LOGIC TABLE, REMOVAL HAS THE EFFECT OF DISABLING THE BATTERY LOWERING DEVICE WHEN THE SWITCH IS IN THE TRIPPED POSITION. FIELD INSTALLER MUST ENSURE THIS MEETS ALL LOCAL CODES BEFORE REMOVAL.

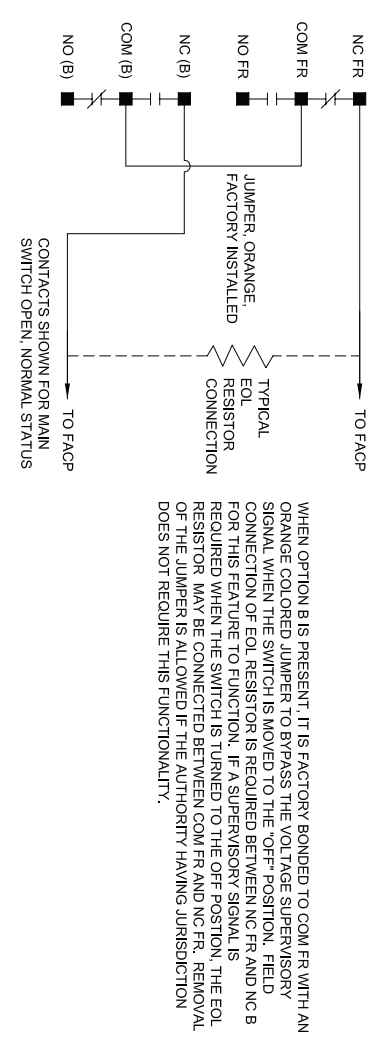
OPTION F3: FIRE ALARM VOLTAGE MONITORING RELAY



OPTION A: BATTERY LOWERING MECHANICALLY INTERLOCKED AUXILIARY CONTACT A



VOLTAGE MONITORING WITH B-CONTACT OPTION

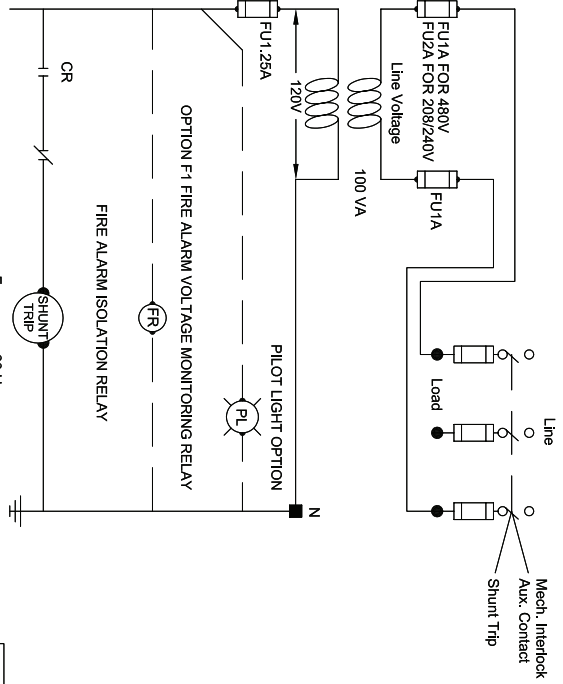


LEGEND:
FACP - FIRE ALARM CONTROL PANEL
NOFA IN - NORMALLY OPEN FIRE ALARM CONTROL INPUT. FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.
NOFA - NORMALLY OPEN FIRE ALARM CONTACTS SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.
SHUNT TRIP - SOLENOID FOR REMOVE TRIP OF SWITCH WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.
OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.
CR - CONTROL RELAY USED TO ISOLATE THE N.O.T.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.
FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).
PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.
CPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.
SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED, OPENS AS POWER SWITCH OPENS.
KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION.
MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.
+ - TERMINAL BLOCK CONNECTION POINT.
● - PRE-WIRED CONNECTION POINTS.

Power Module Switch wiring — continued:

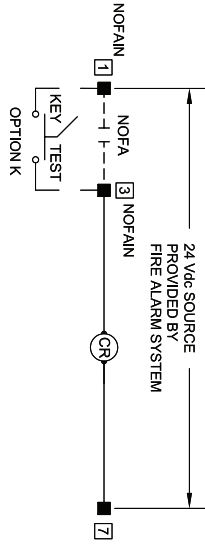
OPTION R2 & F1

TYPICAL CONTROL WITH WIRING OPTIONS FOR FIRE SAFETY INTERFACE



WIRING DIAGRAM

Frequency: 60 Hz
Inrush: 570VA

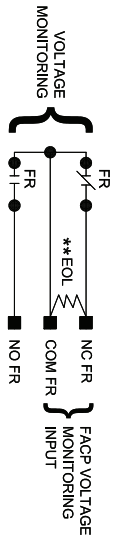


AUXILIARY SWITCH LOGIC		OPTION A *	OPTION B *
MAIN SWITCH POSITION	NO	NC	NO
CLOSED	O	C	O
TRIPPED	C	O	C
OPEN	C	O	C

* AUXILIARY SWITCH LOGIC WHEN BLUE WIRE WITH "+-" MARKER IS REMOVED FROM NC TERMINAL

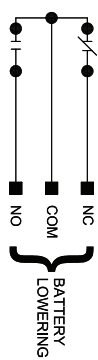
WHERE LOCAL AUTHORITIES HAVING JURISDICTION PERMIT, FIELD REMOVAL OF THE BLUE WIRE IDENTIFIED BY "+-" MARKER WILL CHANGE THE OPTION A SWITCH LOGIC. SEE THE AUXILIARY SWITCH LOGIC CHANGE REMOVAL HAS THE EFFECT OF DISABLING THE BATTERY LOWERING DEVICE WHEN THE SWITCH IS IN THE TRIPPED POSITION. FIELD INSTALLER MUST ENSURE THIS MEETS ALL LOCAL CODES BEFORE REMOVAL.

OPTION F1: FIRE ALARM VOLTAGE MONITORING RELAY



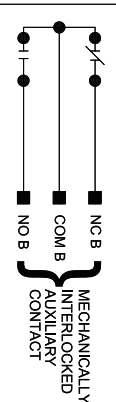
NOTE: CONTACTS FOR FR ARE SHOWN IN DE-ENERGIZED POSITION. **COMMON CONNECTION WITH/OUT OPTION B. CONNECTION FOR WHEN A SUPERVISORY SIGNAL IS REQUIRED WHEN THE MAIN SWITCH IS IN THE OPEN POSITION, OR WHEN THE MAIN SWITCH IS CLOSED AND CONTROL POWER IS LOST. TO MONITOR THE VOLTAGE THE CONTROL WIRING TO MEET NFPA 72-2002 SECTION 6.15.4.4

OPTION A: BATTERY LOWERING MECHANICALLY INTERLOCKED AUXILIARY CONTACT A



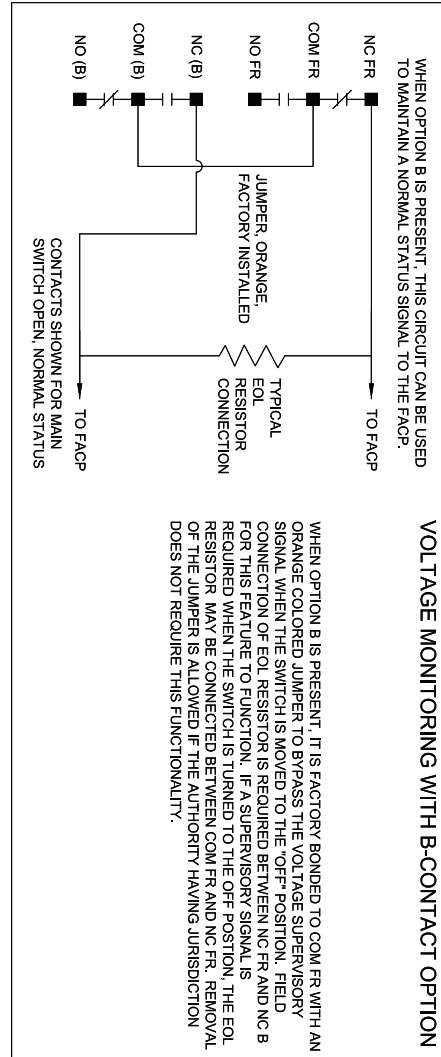
TO CONNECT THE BATTERY LOWERING FOR HYDRAULIC ELEVATOR, CONNECT TO POINTS NC AND COM. NOTE: MECHANICALLY INTERLOCKED AUXILIARY CONTACTS ARE SHOWN FOR THE MAIN SWITCH IN CLOSED POSITION. REQUIRED FOR HYDRAULIC ELEVATORS WITH AUTO RECALL AND LOWERING TO MEET NEC 2005 SECTION 620.9 (c)

OPTION B CONTACTS



NOTE: WHEN OPTION B IS PRESENT, OPTION A IS ALSO PRESENT. SHOWN WITH MAIN SWITCH IN CLOSED POSITION

VOLTAGE MONITORING WITH B-CONTACT OPTION



WHEN OPTION B IS PRESENT, IT IS FACTORY BONDED TO COM FR WITH AN ORANGE COLORED JUMPER TO BYPASS THE VOLTAGE SUPERVISORY SIGNAL WHEN THE SWITCH IS MOVED TO THE "OFF" POSITION. FIELD CONNECTION OF EOL RESISTOR IS REQUIRED BETWEEN NC FR AND NC B FOR THIS FEATURE TO FUNCTION. IF A SUPERVISORY SIGNAL IS REQUIRED WHEN THE SWITCH IS TURNED TO THE OFF POSITION, THE EOL RESISTOR MAY BE CONNECTED BETWEEN COM FR AND NC FR. REMOVAL OF THE JUMPER IS ALLOWED IF THE AUTHORITY HAVING JURISDICTION DOES NOT REQUIRE THIS FUNCTIONALITY.

LEGEND:

- FR - FIRE ALARM CONTROL PANEL
 - NOFA - NORMALLY OPEN FIRE ALARM CONTROL INPUT
 - NOFA - NORMALLY OPEN FIRE ALARM CONTACTS SUPPLIED FROM THE FIRE ALARM SYSTEM TO INITIATE THE SHUNT TRIP.
 - SHUNT TRIP - SOL ENOID FOR REMOTE TRIP OF SWITCH, WHICH IS ACTIVATED BY THE CLOSING OF THE FIRE ALARM CONTACTS OR KEY TEST SWITCH.
 - OPTION R1 - FIRE ALARM INTERFACE RELAY THAT IS OPERATED AT 120VAC FROM SECONDARY OF TRANSFORMER. NO ADDITIONAL POWER NEEDED.
 - CR - CONTROL RELAY USED TO ISOLATE THE N.O.F.A. CONTACTS FROM THE DUTY OF THE SHUNT TRIP.
 - FR - FIRE ALARM VOLTAGE MONITORING RELAY USED TO MONITOR THE STATUS OF CONTROL VOLTAGE FROM A REMOTE LOCATION (i.e. FIRE ALARM CONTROL PANEL).
 - PL - PILOT LIGHT TO VISUALLY INDICATE PRESENCE OF VOLTAGE ON OUTSIDE OF SWITCH ENCLOSURE.
 - OPT - CONTROL POWER TRANSFORMER USED TO STEP DOWN LINE VOLTAGE TO 120VAC TO POWER SHUNT TRIP COIL.
 - SW AUX. - OPTION A OR B, NORMALLY CLOSED CONTACT WHEN SWITCH IS CLOSED. OPENS AS POWER SWITCH OPENS.
 - KEY TEST - KEY-TO-TEST SWITCH USED TO OPERATE SHUNT TRIP FROM THE OUTSIDE OF SWITCH ENCLOSURE. CAN BE USED FOR TROUBLE-SHOOTING AND INSPECTION. MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.
 - MECHANICALLY INTERLOCKED AUXILIARY CONTACT - CONTACT USED TO DISABLE BATTERY LOWERING DEVICE.
 - - PRE-WIRED CONNECTION POINTS.
 - - TERMINAL BLOCK CONNECTION POINT.
- NOTE: TERMINAL 1 IS NOT PRESENT WHEN OPTION K IS ABSENT.

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